

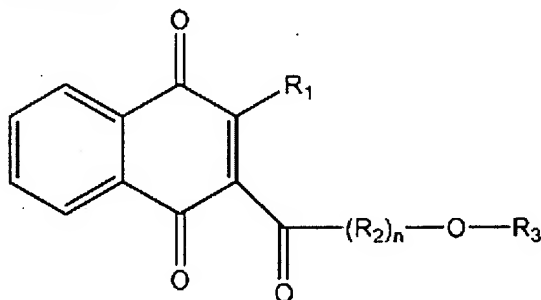
IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1-30 in accordance with the following:

1. (currently amended) A naphthoquinone derivative represented by Formula 1:

Formula 1



wherein:

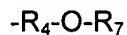
R_1 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

R_2 is selected from the group consisting of an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms;

n is 0 or 1; and

R_3 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, and a group represented by Formula 1a or 1b:

Formula 1a



Formula 1b



wherein:

R_4 , R_5 , and R_6 are selected from the group consisting of, independently, an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms; and

R_7 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

~~wherein the naphthoquinone derivatives having the Formula 1, where $n=0$, R_3 is a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, or a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, are excluded.~~

2. (currently amended) The naphthoquinone derivative according to claim 1, wherein n is 1, R_2 is a phenylene group and R_3 is a methyl group.

3. (currently amended) The naphthoquinone derivative according to claim 1, wherein n is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene group, and R_7 is selected from the group consisting of a tert-butyl, a phenyl, a benzyl, a 4-nitrophenyl, an isopropyl, an ethyl, a 4-tert-butylphenyl, and a 4-nitrophenylmethyl group.

4. (currently amended) The naphthoquinone derivative according to claim 1, wherein n is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a phenylene group, and R_7 is a butyl group.

5. (currently amended) The naphthoquinone derivative according to claim 1, wherein n is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a methylene-phenylene group, and R_7 is selected from the group consisting of $-\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$, $-\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)(\text{CH}_2)_3\text{CH}_3$, a methyl group, and an isopropyl group.

6. (currently amended) The naphthoquinone derivative according to claim 1, wherein n is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene-phenylene group, and R_7 is an n-butyl group.

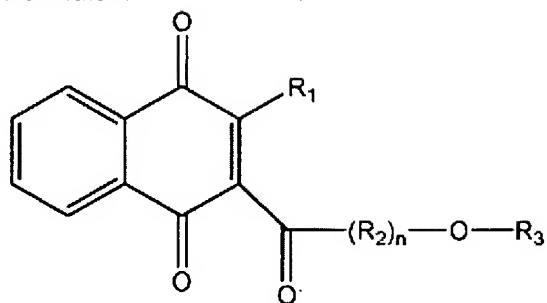
7. (currently amended) An electrophotographic photoreceptor comprising:

a substrate; and

a photosensitive layer comprising a naphthoquinone derivative represented by Formula

1:

Formula 1



wherein:

R_1 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

R_2 is selected from the group consisting of an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms;

n is 0 or 1; and

R_3 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, and a group represented by Formula 1a or 1b:

Formula 1a

$-R_4-O-R_7$

Formula 1b

$-R_5-O-R_6-O-R_7$

wherein:

R_4 , R_5 , and R_6 are selected from the group consisting of, independently, an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms; and

R_7 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms.

wherein the naphthoquinone derivatives having the Formula 1, where $n=0$, R_3 is a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or

~~unsubstituted aryl group having 6 to 30 carbon atoms, or a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, are excluded.~~

8. (currently amended) The electrophotographic photoreceptor according to claim 7, wherein ~~n is 1~~, R_2 is a phenylene group and R_3 is a methyl group.

9. (currently amended) The electrophotographic photoreceptor according to claim 7, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene group, and R_7 is selected from the group consisting of a tert-butyl, a phenyl, a benzyl, a 4-nitrophenyl, an isopropyl, an ethyl, a 4-tert-butylphenyl, and a 4-nitrophenylmethyl group.

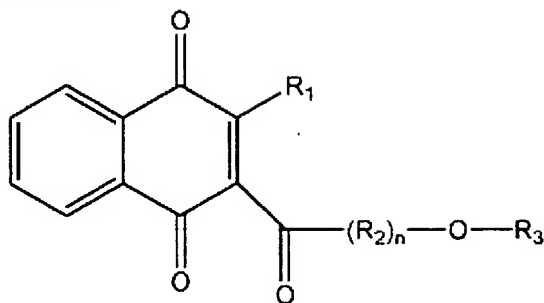
10. (currently amended) The electrophotographic photoreceptor according to claim 7, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a phenylene group, and R_7 is a butyl group.

11. (currently amended) The electrophotographic photoreceptor according to claim 7, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a methylene-phenylene group, and R_7 is selected from the group consisting of $-\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$, $-\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)(\text{CH}_2)_3\text{CH}_3$, a methyl group, and an isopropyl group.

12. (currently amended) The electrophotographic photoreceptor according to claim 7, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene-phenylene group, and R_7 is an n-butyl group.

13. (currently amended) An electrophotographic drum, comprising:
a drum;
a substrate disposed on the drum; and
an electrophotographic photoreceptor disposed on the substrate, the electrophotographic photoreceptor comprising:
a substrate; and
a photosensitive layer comprising a naphthoquinone derivative represented by
Formula 1:

Formula 1



wherein:

R_1 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

R_2 is selected from the group consisting of an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms;

n is 0 or 1; and

R_3 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, and a group represented by Formula 1a or 1b:

Formula 1a

$-R_4-O-R_7$

Formula 1b

$-R_5-O-R_6-O-R_7$

wherein:

R_4 , R_5 , and R_6 are selected from the group consisting of, independently, an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms; and

R_7 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms,

wherein the naphthoquinone derivatives having the Formula 1, where $n=0$, R_3 is a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or

~~unsubstituted aryl group having 6 to 30 carbon atoms, or a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, are excluded,~~

wherein the electrophotographic drum is attachable to/detachable from an image forming apparatus.

14. (currently amended) The electrophotographic drum according to claim 13, wherein ~~n~~ is 1, R_2 is a phenylene group and R_3 is a methyl group.

15. (currently amended) The electrophotographic drum according to claim 13, wherein ~~n~~ is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene group, and R_7 is selected from the group consisting of a tert-butyl, a phenyl, a benzyl, a 4-nitrophenyl, an isopropyl, an ethyl, a 4-tert-butylphenyl, and a 4-nitrophenylmethyl group.

16. (currently amended) The electrophotographic drum according to claim 13, wherein ~~n~~ is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a phenylene group, and R_7 is a butyl group.

17. (currently amended) The electrophotographic drum according to claim 13, wherein ~~n~~ is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a methylene-phenylene group, and R_7 is selected from the group consisting of $-\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$, $-\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)(\text{CH}_2)_3\text{CH}_3$, a methyl group, and an isopropyl group.

18. (currently amended) The electrophotographic drum according to claim 13, wherein ~~n~~ is 0, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene-phenylene group, and R_7 is an n-butyl group.

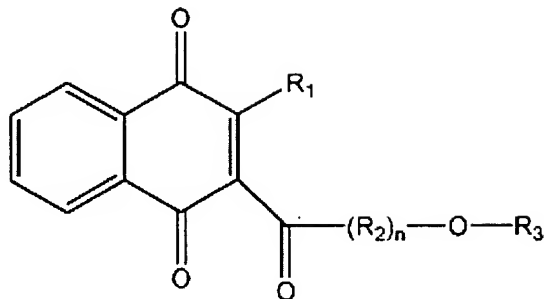
19. (currently amended) An electrophotographic cartridge, comprising:
an electrophotographic photoreceptor comprising:

a substrate; and

a photosensitive layer comprising a naphthoquinone derivative represented by

Formula 1:

Formula 1



wherein:

R_1 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

R_2 is selected from the group consisting of an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms;

n is 0 or 1; and

R_3 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, and a group represented by Formula 1a or 1b:

Formula 1a

$-R_4-O-R_7$

Formula 1b

$-R_5-O-R_6-O-R_7$

wherein:

R_4 , R_5 , and R_6 are selected from the group consisting of, independently, an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms; and

R_7 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

~~wherein the naphthoquinone derivatives having the Formula 1, where $n=0$, R_3 is a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or~~

~~unsubstituted aryl group having 6 to 30 carbon atoms, or a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, are excluded.~~

20. (currently amended) The electrophotographic cartridge according to claim 19, wherein ~~n is 1~~, R_2 is a phenylene group and R_3 is a methyl group.

21. (currently amended) The electrophotographic cartridge according to claim 19, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene group, and R_7 is selected from the group consisting of a tert-butyl, a phenyl, a benzyl, a 4-nitrophenyl, an isopropyl, an ethyl, a 4-tert-butylphenyl, and a 4-nitrophenylmethyl group.

22. (currently amended) The electrophotographic cartridge according to claim 19, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a phenylene group, and R_7 is a butyl group.

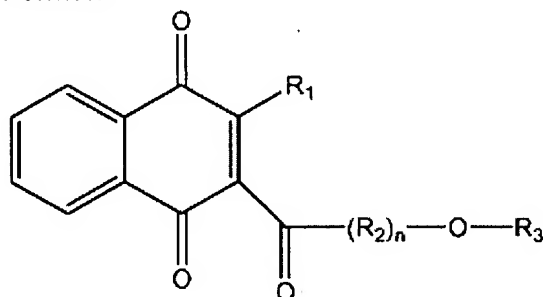
23. (currently amended) The electrophotographic cartridge according to claim 19, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a methylene-phenylene group, and R_7 is selected from the group consisting of $-\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$, $-\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)(\text{CH}_2)_3\text{CH}_3$, a methyl group, and an isopropyl group.

24. (currently amended) The electrophotographic cartridge according to claim 19, wherein ~~n is 0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene-phenylene group, and R_7 is an n-butyl group.

25. (currently amended) An image forming apparatus, comprising:
a photoconductor unit having an electrophotographic photoreceptor, the electrophotographic photoconductor comprising:
a substrate; and
a photosensitive layer comprising a naphthoquinone derivative represented by

Formula 1:

Formula 1



wherein:

R_1 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms;

R_2 is selected from the group consisting of an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms;

n is 0 or 1; and

R_3 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, and a group represented by Formula 1a or 1b:

Formula 1a

$-R_4-O-R_7$

Formula 1b

$-R_5-O-R_6-O-R_7$

wherein:

R_4 , R_5 , and R_6 are selected from the group consisting of, independently, an alkylene group having 2 to 20 carbon atoms, an arylene group having 6 to 30 carbon atoms, and an arylene-alkylene group having 7 to 30 carbon atoms; and

R_7 is selected from the group consisting of a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, and a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms,

~~wherein the naphthoquinone derivatives having the Formula 1, where $n=0$, R_3 is a substituted or unsubstituted alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, or a substituted or unsubstituted aralkyl group having 7 to 30 carbon atoms, are excluded,~~

a charging device which charges the photoconductor unit;

an imagewise light irradiating device which irradiates the charged photoconductor unit with imagewise light to form an electrostatic latent image on the photoconductor unit;

a developing unit that develops the electrostatic latent image with a toner to form a toner

image on the photoconductor unit; and

a transfer device which transfers the toner image onto a receiving material,

26. (currently amended) The image forming apparatus according to claim 25, wherein n is ~~1~~, R_2 is a phenylene group and R_3 is a methyl group.

27. (currently amended) The image forming apparatus according to claim 25, wherein n is ~~0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene group, and R_7 is selected from the group consisting of a tert-butyl, a phenyl, a benzyl, a 4-nitrophenyl, an isopropyl, an ethyl, a 4-tert-butylphenyl, and a 4-nitrophenylmethyl group.

28. (currently amended) The image forming apparatus according to claim 25, wherein n is ~~0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a phenylene group, and R_7 is a butyl group.

29. (currently amended) The image forming apparatus according to claim 25, wherein n is ~~0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is a methylene-phenylene group, and R_7 is selected from the group consisting of $-\text{CH}(\text{CH}_3)\text{CH}(\text{CH}_3)_2$, $-\text{CH}_2\text{CH}(\text{C}_2\text{H}_5)(\text{CH}_2)_3\text{CH}_3$, a methyl group, and an isopropyl group.

30. (currently amended) The image forming apparatus according to claim 25, wherein n is ~~0~~, R_3 is $-R_4-O-R_7$ of the Formula 1a, R_4 is an ethylene-phenylene group, and R_7 is an n-butyl group.